

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A multi-mode block-coded modulation/demodulation method ~~that performs one-way transmission of a multi-mode digital signal by using, between at least two different nodes, different settings for (1) number of levels, (2) code of levels, (3) method of set partitioning and (4) method of modulation that are component elements of a multi-level block-coded modulation system~~ for a transmission system equipped with a multi-mode encoder and a multi-mode decoder, comprising the steps of:

determining a transmission mode based on transmission data contents, an amount of data and a required transmission quality;

making changes to a number of code levels, the multi-mode encoder, a modulation system and a signal point assignment method based on the mode;

encoding the data to obtain a signal;

sending the signal;

receiving the signal;

determining a number of trellis states; and

decoding the received signal using maximum-likelihood decoding.

Claim 2 (Currently Amended): A method according to claim 1, further comprising the step of ~~changing modes~~ using a different mode for each block code frame.

Claim 3 (Currently Amended): A method according to claim 1, further comprising the step of carrying out maximum-likelihood decoding ~~that is carried out~~ on a receiving side by a single Viterbi decoder which uses a trellis diagram that includes all modes.

Claim 4 (Currently Amended): A method according to claim 3, further comprising the step of carrying out mode selection and decoding ~~that are carried out~~ simultaneously on the receiving side by performing Viterbi decoding.

Claim 5 (Currently Amended): A method according to claim 1, further comprising the steps of inserting ~~transmission mode~~ information as an ~~encoded mode index of codes of one or more level, and changing the codes of other levels according to a mode~~ on a transmission mode in a multi-mode digital signal using one or more codes of levels as an encoded mode index or indices, and changing codes of other levels according to the transmission mode.

Claim 6 (Currently Amended): A method according to claim 5, further comprising the ~~steps of~~ using a mode-index code as a highest level code and using ~~information of the mode-index code~~ the highest level code for a first bifurcation in a ~~bit partitioning set-partitioning~~ method.

Claim 7 (Currently Amended): A method according to claim 1, further comprising the step of ~~realizing a multi-mode system that is composed by~~ assigning different bit series to ~~modulation~~ each of identical signal points ~~having identical coordinates for different modulation~~ in a signal space diagram to compose a multi-mode system.

Claim 8 (Currently Amended): A method according to claim 5, further comprising the steps of ~~realizing on an encoding side a multi-mode system that is composed by~~ assigning different bit series to ~~modulation~~ each of identical signal points ~~having identical coordinates for different modulation~~ in a signal space diagram to compose a multi-mode system on an

encoding side, and ~~using~~ on a decoding side using a mode decoding result to determine multiple bit series assignments to identical signal points on a signal space diagram.

Claim 9 (Currently Amended): A method according to claim 1, further comprising ~~the step of multi-mode transmission that is carried out in which~~ carrying out multi-mode transmission, wherein numbers of transmission symbols are identical to numbers of block code bits.

Claim 10 (Currently Amended): A method according to claim 5, further comprising the steps of using a mode-index code as a highest level code and, ~~determining a mode on the~~ on a receiving side, by using a multi-level decoding method to decode a highest level, and ~~using a signal to switch a lower level decoder, which signal is decoded by the multi-level decoding method~~ decoding the highest level code using a multistage decoding method to determine a mode and using a decoded signal for lower-level decoder switching in the multistage decoding method.

Claim 11 (Currently Amended): A method according to claim 1, ~~further comprising the step of using at each level and error-protected transmission signal that contains~~ wherein transmissions at each level comprise an unequal error protection portion that differs according to a mode, and an equal error protection portion.

Claim 12 (Currently Amended): A method according to claim 1, ~~further comprising the step of, when a transmission is~~ wherein for transmission from a mobile station in a wireless communications system, ~~switching transmission modes according to~~ are switched in

accordance with movement status ~~of~~ which represents that the mobile station is moving or at rest.

Claim 13 (Currently Amended): A method according to claim 1, ~~further comprising the step of, when a~~ wherein for transmission is from a mobile station of a mobile wireless communications system, ~~switching transmission modes according to a noise environment are~~ switched in accordance with a noise strength of the mobile station.